

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/089,871 06/04/98 BARENDSE

R 97253-A

020306 HM12/0705
MCDONNELL BOEHNEN HULBERT & BERGHOFF
300 SOUTH WACKER DRIVE
SUITE 3200
CHICAGO IL 60606

EXAMINER

TUNG, P

ART UNIT

PAPER NUMBER

1652

DATE MAILED:

07/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/089,871

Applicant(s)
Barendse et al.

Examiner
Peter Tung

Art Unit
1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 23, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-28, 31-35, 39, and 40 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-28, 31-35, 39, and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

Art Unit: 1652

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 4/23/01 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/089,871 is acceptable and a CPA has been established. An action on the CPA follows.
2. Claims 18-28, 31-35, 39 and 40 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1652

4. ✓ Claims 18, 19, 26-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. Nielsen et al. teach (page 5, lines 25-29; page 10, lines 16-21; page 11, lines 27-30; page 12, lines 18-21) an *Aspergillus* phytase containing granulate comprising 10,000 FTU/gram of a phytase-containing feed additive. Nielsen et al. do not teach a phytase containing granulate comprising an edible carbohydrate polymer. Jacobsen et al. teach (page 2, lines 14-22) an enzyme containing granulate comprising 2-40% cellulose, where the granulate is used as an additive to fodders. Jacobsen et al. do not teach a enzyme containing granulate comprising phytase. A phytase-containing granulate comprising 10,000 FTU/gram and 2-40% cellulose would have been obvious to one of ordinary skill in the art at the time the invention was made for the benefit of a animal feed additive containing phytase. One of ordinary skill in the art is motivated to combine the two references as Nielsen et al. teach a granulated feed additive containing phytase and Jacobsen et al. teach enzyme containing granulates for use in fodders comprising 2-40% cellulose. One of ordinary skill in the art would have had a reasonable expectation of success at a phytase containing granulated feed additive comprising 2-40% cellulose as the teachings of Jacobsen et al. show that granulates containing enzymes where the granulate contains up to 40% cellulose can be used in animal feeds. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

5. ✓ Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. The teachings of Nielsen et al. in view of Jacobsen et al. as applied

Art Unit: 1652

to claim 18 have been discussed supra. Claim 20 adds the further limitation of the granulate comprising at least one divalent cation. Nielsen et al. in view of Jacobsen et al. do not teach a phytase-containing granulate comprising at least 15% of an edible polymer and at least one divalent cation. Jacobsen et al. (page 3, lines 19-22) further teach the use of a coating agent comprising the divalent metals magnesium or calcium. Jacobsen et al. do not teach a phytase containing granulate. A phytase-containing granulate, as taught by Nielsen et al. in view of Jacobsen et al., comprising a divalent cation, as taught by Jacobsen et al., would have been obvious to one of ordinary skill in the art at the time the invention was made. One of ordinary skill in the art would have been motivated to combine the references as Jacobsen et al. teaches that an enzyme containing granulate, according to Nielsen et al. in view of Jacobsen et al., can be coated with a coating agent comprising magnesium silicate or calcium carbonate. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

6. ✓ Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. as applied to claim 19 above, and further in view of Markussen et al. (U.S. Patent No. 4,106,991). The teachings of Nielsen et al. in view of Jacobsen et al. have been discussed supra. Claims 21-23 add the further limitation of the granulate comprising a derivatized cellulose. Nielsen et al. in view of Jacobsen et al. do not teach a phytase-containing granulate comprising at least 15% of an edible polymer and a derivatized cellulose. Markussen et al. teach (col. 3, lines 9-18) enzyme containing granulates comprising carboxymethyl cellulose as a binder

Art Unit: 1652

for granulation. Markussen et al. do not teach a phytase-containing granulate. A phytase-containing granulate as taught by Nielsen et al. in view of Jacobsen et al. comprising carboxymethyl cellulose, as taught by Markussen et al. would have been obvious to one of ordinary skill in the art at the time the invention was made. One of ordinary skill in the art would have been motivated to combine the references as Markussen et al. teach that carboxymethyl cellulose is used as a binder in granulation while Nielsen et al. in view of Jacobsen et al. teach a phytase containing granulate. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

7. ✓ Claims 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. The teachings of Nielsen et al. in view of Jacobsen et al. as applied to claim 19 have been discussed supra. Claim 24 adds the further limitation of the phytase-containing granulate additionally comprising an endo-xylanase and/or beta-glucanase. Nielsen et al. further teach (page 11, lines 5-19) phytase-containing feed additive comprising additional glucosidase enzymes such as xylan-endo-1,3-beta-xylosidase and endo-1,6-beta-glucanase. A phytase-containing granulate, as taught by Nielsen et al. in view of Jacobsen et al., comprising xylan-endo-1,3-beta-xylosidase and endo-1,6-beta-glucanase, as taught by Nielsen et al., would have been obvious to one of ordinary skill in the art at the time the invention was made. One of ordinary skill in the art is motivated to combine the references as Nielsen et al. teaches that a phytase-containing feed additive can further comprise several different glucosidase enzymes.

Art Unit: 1652

Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

8. ^{NO} Claims 19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. The teachings of Nielsen et al. in view of Jacobsen et al. as applied to claim 19 have been discussed supra. Claim 25 adds the further limitation of the phytase-containing granulate where the carrier comprises starch. Nielsen et al. further teach (page 11, lines 5-19) phytase-containing feed additive comprising additional glucosidase enzymes such as xylan-endo-1,3-beta-xylosidase and endo-1,6-beta-glucanase. A phytase-containing granulate, as taught by Nielsen et al. in view of Jacobsen et al., comprising xylan-endo-1,3-beta-xylosidase and endo-1,6-beta-glucanase, as taught by Nielsen et al., would have been obvious to one of ordinary skill in the art at the time the invention was made. One of ordinary skill in the art is motivated to combine the references as Nielsen et al. teaches that a phytase-containing feed additive can further comprise several different glucosidase enzymes. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

9. ✓ Claims 19, 21, 22, 25 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable ✓ over Nielsen et al. in view of Rokey et al (U.S. Patent No. 5,480,673). Nielsen et al. teach (page 5, lines 25-29; page 10, lines 16-21; page 10, lines 25-26; page 11, lines 27-30; page 12, lines 18-21) an *Aspergillus* phytase containing granulate comprising 10,000 FTU/gram where the enzyme is added after pelleting or extrusion of the feed. Nielsen et al. do not teach a phytase containing

Art Unit: 1652

granulate comprising an edible carbohydrate polymer or soy oil. Rokey teaches (column 5, lines 15-45; column 6, lines 15-50) extruded particle animal feed comprising soy oil and corn. Rokey does not teach an enzyme containing granulate comprising phytase. A phytase-containing feed granulate of 10,000 FTU/gram, comprising soy oil and corn, which comprises edible carbohydrate, would have been obvious to one of ordinary skill in the art at the time the invention was made for the benefit of an animal feed containing phytase. One of ordinary skill in the art is motivated to combine the two references as Nielsen et al. teach a *Aspergillus* phytase containing granulate comprising 10,000 FTU/gram where the enzyme is added after pelleting or extrusion of the feed and Rokey teaches an extruded particle animal feed comprising soy oil and corn. One of ordinary skill in the art would have had a reasonable expectation of success at an extruded particle animal feed comprising soy oil, corn and phytase as the teachings of Nielsen et al. show that phytase can be applied after pelleting or extruding an animal feed and the teachings of Rokey show extruded particle animal feed comprising soy oil and corn. Additionally, corn is recognized in the art as containing starch. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

10. ✓ Claims 18 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. The teachings of Nielsen et al. in view of Jacobsen et al. as applied to claim 18 have been discussed supra. Claims 31-35 add the further limitations of a animal feed composition comprising a phytase-containing granulate. Nielsen et al. in view of Jacobsen et al. do not teach a feed composition comprising a phytase-containing granulate

Art Unit: 1652

comprising at least 6,000 FTU/gram and 2-40% cellulose. Nielsen et al. further teach (page 10, lines 27-page 11, lines 4) a feed composition comprising a phytase feed additive and animal feed substances. An animal feed composition comprising animal feed substances and a phytase-containing granulate comprising at least 6,000 FTU/gram and 2-40% cellulose would have been obvious to one of ordinary skill in the art at the time the invention was made. One of ordinary skill in the art is motivated to do this for the benefit of a phytase-containing animal feed. One of ordinary skill in the art would have been motivated to combine the teachings as Nielsen et al. teaches an animal feed composition comprising a phytase-containing granulate and animal feed substances. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

11. / Claims 21, 22, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen et al. in view of Jacobsen et al. as applied to claim 19 above, and further in view of Aulik et al. (U.S. Patent No. 4,959,240). The teachings of Nielsen et al. in view of Jacobsen et al. have been discussed supra. Claims 21, 22, 39 and 40 add the further limitation of the granulate comprising soy oil or canola oil and hydroxypropylmethyl cellulose. Nielsen et al. in view of Jacobsen et al. do not teach a phytase-containing granulate comprising soy or canola oil and hydroxypropylmethyl cellulose. Aulik et al. teach (col. 4, lines 9-35; col. 2, lines 17-35) the use of soy or canola oil as a lubricating component in the preparation of processed foods. Aulik et al. also teach (col. 5, lines 39-67) the use of hydroxypropylmethyl cellulose as an agent to control the structural properties of the food. Aulik et al. do not teach a phytase-containing granulate

Art Unit: 1652

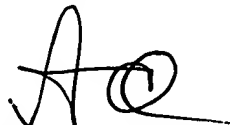
comprising soy or canola oil and hydroxypropylmethyl cellulose. A phytase-containing granulate, as taught by Nielsen et al. in view of Jacobsen et al., containing soy or canola oil and hydroxypropylmethyl cellulose, as taught by Aulik et al., would have been obvious to one of ordinary skill in the art at the time the invention was made for the benefit of preparing and controlling the structural properties of the phytase-containing granulate. One of ordinary skill in the art is motivated to have oil in the granulate to allow lubrication in the machine processing of a phytase granulate and to include hydroxypropylmethyl cellulose in the granulate to control the structural properties of the granulate during processing. One of ordinary skill in the art is motivated to combine the references as the teachings of Aulik et al. are directed to the manufacture of foodstuffs, in particular to extruded, processed foods. Therefore the invention as a whole would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Tung, Ph.D. whose telephone number is (703) 308-9436. The examiner can normally be reached on Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy, Ph.D., can be reached on (703) 308-3804. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-0294.

Art Unit: 1652

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



PONNATHAPACHUT MURTHY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600